

MAGNETIC RESONANCE IMAGING APPARATUS

ABSTRACT OF THE DISCLOSURE

For the purpose of providing a magnetic resonance imaging apparatus for
5 capturing water/fat-separated images free of banding artifacts in an SSFP state,
an apparatus comprises: acquiring means (202) for acquiring echo data of a
plurality of views in which a phase difference between water and fat is $2\pi/m$
with spins within a subject brought to the SSFP state and repeating the
acquisition for $k = 0$ through $M - 1$ with a step difference in a phase of an RF
10 pulse of $2\pi \cdot k / M$; transforming means (204) for conducting Fourier
transformation on the echo data based on the phase step difference; separating
means (206) for separating water data and fat data respectively in $F(0)$ term and
 $F(1)$ term of the Fourier-transformed data using the phase difference between
water and fat; adding means (208') for obtaining a sum of absolute values of at
15 least the water data or fat data in the $F(0)$ term and $F(1)$ term; and image
producing means (210') for producing an image based on the sum data.